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SPECIAL REPORT

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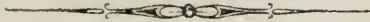
Board of Public Works,

TO THE

LEGISLATURE

OF THE

STATE OF LOUISIANA.



BATON ROUGE:

J. M. TAYLOR, STATE PRINTER.

1861.



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BOARD OF PUBLIC WORKS, }  
Baton Rouge, La., FEB. 21, 1861. }

*Hon. C. H. Morrison, Speaker House of Representatives:*

SIR—The Board of Public Works respectfully transmit the accompanying Special Report.

Very respectfully, your ob't serv't,

LEWIS G. DERUSSY,

Pres't Board Public Works.

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## SPECIAL REPORT

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*To the Honorable the Senate and House of Representatives :*

The Board of Public Works deem it their duty to present to the Legislature a brief report, embodying their recommendations of such legislative measures as they consider imperatively called for by the requirements of the department for the current year.

We add, in as few words as possible, such remarks as seem necessary for explanations.

### CONTINGENT FUND FOR SURVEYS.

Salaries of rodmen, chainmen, traveling expenses, advertising, office, etc .....	\$20,000 00
Salary of Commissioners .....	8,000 00
Secretary .....	2,000 00
Chief and Assistant Engineers .....	11,000 00
Draughtsmen .....	1,800 00
Captains of boats.....	2,400 00
Wood .....	700 00
Medicine, clothing, subsistence, etc., for negroes.....	2,000 00
Contingencies.....	1,000 00
One dredge boat on improved plan.....	25,000 00
Tackle, etc., for boats .....	2,000 00

### *Second District.*

For drainage in parish of Vermillion; see Engineer's report, page 67.....	3,700 00
For canal between Verret and Chevrénil, in parish of Lafourche; see Engineer's report, page 90.....	15,644 40

### *Third District.*

To Benjamin Ray, Contractor for work on Couchatta Chute, for completing contract; see Engineer's report, pages 57 and 58.....	3,877 70
To complete Red River levees, right bank, parish of Rapides; see Engineer's report, page 58.....	2,500 00

Re-appropriating unexpended balance, refunded by Commissioners, for cutting out falls in Red River; see Engineer's report, page 101 .....	11,350 00
Appropriation to pay outstanding warrants to Thomas Hunter, as per report of Board, January, 1861.....	9,000 00
To complete drainage in Bayou Pierre, as contemplated by act No. 214, of 1860.....	10,000 00
Re-appropriation to preserve navigation between Red and Mississippi Rivers, act 262 of 1859.....	31,884 03

*Fourth District.*

To Henry Brigham, of Morehouse parish, La., cost of levee across the Gallion Sloughs, 3,919 cubic yards, at 25½ cts. per cubic yard, being his individual expense; see Engineer's report, pages 77 and 78.....	999 34
Re-construct levee across upper outlet on Bayou Bonne Idée, parish of Morehouse, 888 cubic yards, at 25 cents per yard, and incidental expenses, etc; see Engineer's report, pages 77 and 78.....	400 00
Appropriation to levee the mouths of Hurricane, Red Month and Muddy Bayous, in Franklin parish; see Engineer's report, page 79 .....	4,200 00

The Board of Public Works have given great attention to the report of the late Chief Engineer, Col. Duncan, upon a work of improvement by which he proposes to preserve navigation to Red River, viz: Separating Red and Atchafalaya Rivers entirely from the Mississippi by dyke across Old River, making the first two one continuous stream, returning to the Mississippi by the Plaquemine Bayou, which, for this purpose, is proposed to be deepened, and converted to a canal, and supplied at its Mississippi junction with a lock of suitable size to pass a largest class steamer, and do not concur with the late Chief Engineer in recommending the adoption by the Legislature of such a work.

The Legislature has now received two reports, based upon the most minute surveys and examinations, executed in all the details upon which propositions of ameliorations, and estimation can be founded; and yet, notwithstanding the incalculable importance of these proposed improvements to the commercial and agricultural interests of the State, nothing as yet proposed seems to have engaged the approving sense of your Honorable Body, while the evil increases with each returning flood of the Mississippi. The several topographical and hydrographic examinations, now perfected, and upon which proposed improvements, with estimates, have been reported to your Honorable Body, are

1st. Act No. 60, 9th March, 1858, directing survey and report by late State Engineer, Col. Hebert, upon the practicability of turning Red River into the Mississippi, by the Cut-off Bayou.

2d. Act No. 262, 17th March, 1859, appropriating 35,000 dollars for

survey and reports as to the best means of preserving navigation to the Red, by way of Old River.

3d. Act No. 29, 17th February, 1860, directing examination and report for constructing dam across Old River, separating the Red from the Atchafalaya River.

4th. Act No. 30, of same date, requiring examination and report upon results from partially closing Atchafalaya.

Under the authority and direction of the above several acts, the State Engineer and the Board of Public Works have, at different times, submitted to your Honorable Body, the result of all the investigations specified in them, and the Board take the occasion again respectfully to invite the attention of the Legislature to the adoption of one or other of the propositions recommended under the first act.

We have first, the report of the late State Engineer, dated February 7, 1859, quoted by the late Chief Engineer in his late report, condemns the plan of the Red River and Mississippi connection by the Bayou Cut-off, as extremely costly and impracticable.

Second. Under the second act passed, (No. 262, of 1859) we have the report of the same officer, accompanying which are given elaborate examinations.

Measurements and levels, resulting in a preference by that officer, "of closure of Atchafalaya" near Simmesport, thereby forcing Red River to the Mississippi, and restoring navigable supply of water to the Atchafalaya by the improvement of the Latanaeche Bayou. This improvement was not estimated for by the late State Engineer, in his report, dated March, 1860, but has been estimated by the Chief Engineer of the Board, as costing, when finished, two millions sixty-four thousand dollars; and, thirdly, we have, under acts Nos. 29 and 30, of April 17, 1860, directing examinations for constructing a dam across Old River, with the necessary channels, first one, for out-let to Red River, and the other as inlet to the Atchafalaya, estimated by the late Chief Engineer, J. K. Duncan, at nine hundred and ninety-six thousand dollars, (\$996,000) exclusive of the necessary increase of high to levees on both banks of the Mississippi.

Your Honorable Body will perceive that both of these propositions provide for improvements upon the largest possible scale, calculated for a condition of the highest water stages, while the present Board are of opinion that improvements for a condition of low-water will be found to answer all requirements.

Their present proposition, therefore, has reference to the preservation of low-water navigation of the Red River, by the upper Old River, restoring a navigable supply of water to the Atchafalaya, by the way of lower Old River. To this end the Board propose to construct a dam at the points marked l. f. upon the accompanying map, immediately below the old



month of Red River, shutting off its escape to the Atchafalaya, cutting a short channel out of Red River, from its upper or north bank, immediately at its junction with the Mississippi, at the points G H upon the accompanying map, and cutting also an inlet channel to the Atchafalaya by way of lower Old River, at the points marked I J upon the accompanying map. The dyke, if made of earth, is estimated for as follows, viz : Crest, 50 feet wide, average height  $24\frac{1}{2}$  feet, length of dyke, 2,200 feet, slope upon each side, eight to one, gives 428,600 cubic yards, at 25 cents, is \$107,150.

Or, should a pile work dam be preferred, it is estimated to cost, when properly braced and riveted upon its upper side	\$70,000 00
Improving direction of outlet of Red River.....	50,000 00
"                "                inlet                .....	25,000 00
Improvement of earthen dyke.....	\$107,150
Outlet and inlet complete.....	75,000
	<hr/>
	\$182,150
For improvement with pile dam.....	\$70,000 00
Same inlet and outlet.....	75,000 00
	<hr/>
	\$145,000 00

Of these two methods of improvement the Board, after mature deliberation, have given a preference to the pile-dam requiring \$37,000 less than the earthen dyke, and because it is believed that after two or three seasons of high water, it will so fill by the torpid condition of the water at that point, as to become itself an earth dam, while it will not be so subject to be depressed in elevation as an earthen dam.

In reducing the first proposition to establish navigation by Bayou Cut-off also to a low-water condition, the dyke across the Red River below its juncture with the bayou would cost \$107,150, the dam by pile work would cost \$70,000, but the cutting out a channel from the Mississippi to the Red River would cost at least the large amount of \$400,000, making the navigation by this route amount to something like \$500,000. Besides which the improvement would require a long time for its completion, since the navigation of this bayou must be perfected before the dyke could be thrown across Red River. See the line K. L. on the accompanying map.

There is, therefore, no hesitancy on the part of the Board, in recommending the adoption by the Legislature of the proposition of improvement by the way of Old River, not only in consequence of its lesser cost to the Cut-off Bayou route, but also because it will be fully as effectual in restoring and maintaining navigation. This work is considered by the Board of indispensable necessity. And from the formidable obstruction to low-water navigation during the whole of last autumn, it is not too much to predict that unless there be labor applied to upper Old River, so soon as the Mississippi

may return to a falling stage, the low-water communication between the Mississippi and the Red River will be entirely lost.

The Board is aware, from the best information, that the high stage navigation of the Red River does not now suffice for more than half, or at most two-thirds, of its commercial and agricultural necessities; there must besides be a low-water navigation which, even with the addition of Railroad transportation now being perfected, will not more than transport the daily increasing crops of the vast country finding outlet only by the Red River, viz: Eastern Texas, Western Arkansas, with the Red River, Ouachita and Boeuf River valleys.

The number of bales of cotton now annually passing out of the Red River is estimated at not less than 600,000, having increased over 100,000 bales in the last three years.

The Board have suggested that in their opinion the transportation facilities, both by water and by Railroad, (the latter being as yet only prospective) would not more than suffice for the trade of the vast country embraced. But no one who will institute an inquiry can arrive at any other conclusion than, that the water transportation in the case under consideration, is by far superior to the land. But it is not only as an outlet to agricultural products, that the navigation of the Red River is an indispensable necessity, it is so also with reference to the returning freights, distributing as they do necessities to comfort and even subsistence itself.

We present to you an extract from the report of J. K. Duncan, late Chief Engineer, to show the condition of the mouth of Old River, during the summer and fall months. On page 27, he says:

"The great difficulties in the navigation of Old River during low-water, arise principally from the bar at its immediate mouth, and the many increasing shoals around and below the islands in the wider part of the channel. These latter shoals are getting more and more numerous every year. The bar at the mouth is composed of very light and shifting alluvial deposit, which is constantly changing its position under the influence of the currents, but more especially under that of the eddies already mentioned.

In July last these changes were so rapid that a boat in passing over the bar on her up trip, was almost sure to run aground on taking the same channel on her return. The Anna Perret, drawing five feet, grounded in going up on the 19th of July, on attempting the same channel which she had safely taken a few days before in coming down. After lying some twelve hours the soundings on her port side gave only one foot in depth, from stem to stern. The light sands constituting the bar having drifted around her to that depth, in this short space of time. On the 12th of August, the mouth was entirely closed to the passage of the Catahoula, at which time there were from eighteen to twenty inches of water upon the bar. It was subsequently reported to have fallen still lower.

On the 28th of September, shortly after one of the small class steamers had ploughed her way through the bar, there was obtained by accurate measurements the following results :

Actual width of water channel.....	170 feet.
Average depth of channel.....	2.959 feet.
Sectional water area about.....	503 square feet.

Hence, you will perceive, that navigation in Old River can only be preserved by aid from the State."

It is also proper here to address to your honorable body some remarks on the removal of rock obstructions at Alexandria, Red River. From such information as the Board of Public Works have been enabled to collect, it appears that a portion of the blasting and removal of obstructions has been effected, but that the navigation may still be improved by appropriating an unexpended balance of the funds applied to that work by act No. 152, of 1857, which balance, amounting to \$11,350, has been refunded to the treasury, in compliance with act 211, of 1860, and which is borne upon the books of the Auditor. Shall this balance be reappropriated? The Board is of opinion that it should, and it is of the greatest importance that the work should be perfected, and recommend the re-appropriation of the above said balance, with the purpose of carrying on the work with as little cost as possible and new contracts for the completion of the work, or, at least, so much of it as may exhaust the funds originally appropriated.

Another item to which the Board would invite the attention of your honorable body, is that of \$25,000 for a Dredge Boat. There is none in the service of the State; one such is absolutely necessary. There has not been a season of low water in Red, Ouachita, or Boeuf Rivers when the services of such a boat would not have been of the greatest advantage to navigation. And it is believed that the use of a dredge boat in preserving the communication between the Red and Mississippi Rivers, cannot be dispensed with until some permanent improvement be adopted and completed. The Board urgently recommend also, the re-appropriation of \$31,884 03, appropriated by act 262, of 1852, to preserve navigation through Old River—this amount being about to revert to the Treasury by constitutional limitation.

In the above report no recommendations are made for special works in the First District. There exists now, under several acts, the following moneys to the credit of the District, viz :

Act 171, of 1859, to carry into effect the provisions of joint resolution 239, of 1858, for surveys of Bayous Paul and Fountain, in the parish of East Baton Rouge.....	\$6,690 00
Act 173, of 1859, for levee purposes in the parish of Jefferson....	1,463 45
Act 199, of 1859, to reclaim lands in the parish of St. John Baptist.....	7,000 00
Act 203, of 1859, to reclaim swamp land in the First District....	403 66
Act 204, of 1859, to reclaim swamp land in the parish of Plaquemines, First District.....	1,911 08

It is seen that all of these balances of appropriations shall expire in May next, by constitutional limitation. The Board, so far as the First District is concerned, make no particular recommendation of special works. They are of opinion that, for the present, the funds of the First District should be applied to the maintenance of the Mississippi levees, and works of closing crevasses when occurring in said levees, and in repairing such levees in the District as have been built by the State.

The Board has not now the data necessary to make an accurate estimate, but would recommend liberality on the part of your honorable bodies, especially as the district will be entirely destitute of funds in May, unless new appropriations are made.

All of which is respectfully submitted.

(Signed,)

LEWIS G. DERUSSY,  
LOUIS HEBERT,  
ROBT. J. CALDWELL,

J. G. RICHARDSON,

Secretary Board of Public Works.

BATON ROUGE, February 21st, 1861.





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